

What is Claimed:

1 *SUP A' >* 1. A method for visualizing data arrays provided  
2 in the form of a plurality of data values, said method  
3 comprising the steps of:

4 generating a grid based on the plurality of data  
5 values;

6 associating each data value of the plurality of  
7 data values with one of a plurality of geometric shapes  
8 according to a predetermined set of rules;

9 placing said one of the plurality of geometric  
10 shapes associated with each data value of the plurality of  
11 data values on the grid; and

12 displaying visual and geometric information placed  
13 on the grid to a user in graphical form.

1 2. A method for visualizing data arrays provided  
2 in the form of a plurality of data values, said method  
3 comprising the steps of:

4 generating a grid based on the plurality of data  
5 values;

6 identifying one of a plurality of numerical  
7 attributes associated with each data value of the plurality  
8 of data values;

9 associating each numerical attribute with one of a  
10 plurality of visual attributes;

11 associating each data value of the plurality of  
12 data values with one of a plurality of geometric shapes each  
13 having one of the plurality of visual attributes, which is  
14 consistent with the data value, according to a predetermined  
15 set of rules;

16 placing said one of the plurality of geometric  
17 shapes associated with each data value of the plurality of  
18 data values on the grid; and

19 displaying visual and geometric information placed  
20 on the grid to a user in graphical form.

1                   3.    A method for visualizing data provided in the  
2    form of a geometric representation, said method comprising  
3    the steps of:

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4         extracting a plurality of data values from the
5 geometric representation;

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6           generating a graphic representation of the  
7 plurality of data values; and

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8      displaying the graphic representation to a user.
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4. The method according to claim 3, wherein the graphic representation of the plurality of data values is the graphic representation of a conductance matrix.

1            5.    An article of manufacture comprising a  
2    computer usable medium having computer readable program code  
3    means embodied therein for visualizing data arrays provided  
4    in the form of a plurality of data values, the computer  
5    readable program code means in said article of manufacture

6 comprising computer readable program code means for causing  
7 a computer to effect:

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8         generating a grid based on the plurality of data
9     values;
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10 associating each data value of the plurality of  
11 data values with one of a plurality of geometric shapes  
12 according to a predetermined set of rules;

13 placing said one of the plurality of geometric  
14 shapes associated with each data value of the plurality of  
15 data values on the grid; and

16            displaying visual and geometric information placed  
17   on the grid to a user in graphical form.

1           6.     An article of manufacture comprising a  
2     computer usable medium having computer readable program code  
3     means embodied therein for visualizing data arrays provided  
4     in the form of a plurality of data values, the computer  
5     readable program code means in said article of manufacture  
6     comprising computer readable program code means for causing  
7     a computer to effect:

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8         generating a grid based on the plurality of data
9 values;
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10 identifying one of a plurality of numerical  
11 attributes associated with each data value of the plurality  
12 of data values;

13 associating each numerical attribute with one of a  
14 plurality of visual attributes;



1           9.    A computer program product comprising a  
2 computer usable medium having computer readable program code  
3 means embodied therein for causing visualization of data  
4 arrays provided in the form of a plurality of data values,  
5 the computer readable program code means in said computer  
6 program product comprising computer readable program code  
7 means for causing a computer to effect:

8               generating a grid based on the plurality of data  
9 values;

10              associating each data value of the plurality of  
11 data values with one of a plurality of geometric shapes  
12 according to a predetermined set of rules;

13              placing said one of the plurality of geometric  
14 shapes associated with each data value of the plurality of  
15 data values on the grid; and

16              displaying visual and geometric information placed  
17 on the grid to a user in graphical form.

1           10.  A computer program product comprising a  
2 computer usable medium having computer readable program code  
3 means embodied therein for causing visualization of data  
4 arrays provided in the form of a plurality of data values,  
5 the computer readable program code means in said computer  
6 program product comprising computer readable program code  
7 means for causing a computer to effect:

8               generating a grid based on the plurality of data  
9 values;

10 identifying one of a plurality of numerical  
11 attributes associated with each data value of the plurality  
12 of data values;

13 associating each numerical attribute with one of a  
14 plurality of visual attributes;

15 associating each data value of the plurality of  
16 data values with one of a plurality of geometric shapes each  
17 having one of the plurality of visual attributes, which is  
18 consistent with the data value, according to a predetermined  
19 set of rules;

20 placing said one of the plurality of geometric  
21 shapes associated with each data value of the plurality of  
22 data values on the grid; and

23 displaying visual and geometric information placed  
24 on the grid to a user in graphical form.

1 *SUB A<sup>3</sup>* 11. A computer program product comprising a  
2 computer usable medium having computer readable program code  
3 means embodied therein for causing visualization of data  
4 provided in the form of a geometric representation, the  
5 computer readable program code means in said computer  
6 program product comprising computer readable program code  
7 means for causing a computer to effect:

8 extracting a plurality of data values from the  
9 geometric representation;

10 generating a graphic representation of the  
11 plurality of data values; and



8 identifying one of a plurality of numerical  
9 attributes associated with each data value of the plurality  
10 of data values;

11 associating each numerical attribute with one of a  
12 plurality of visual attributes;

13 associating each data value of the plurality of  
14 data values with one of a plurality of geometric shapes each  
15 having one of the plurality of visual attributes, which is  
16 consistent with the data value, according to a predetermined  
17 set of rules;

18 placing said one of the plurality of geometric  
19 shapes associated with each data value of the plurality of  
20 data values on the grid; and

21           displaying visual and geometric information placed  
22   on the grid to a user in graphical form.

1 *Sub A1* 15. A storage device readable by a machine,  
2 tangibly embodying a program of instructions executable by  
3 the machine to perform a method for visualizing data  
4 provided in the form of a geometric representation, said  
5 method comprising the steps of:

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6         extracting a plurality of data values from the
7         geometric representation;

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8           generating a graphic representation of the  
9 plurality of data values; and

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10      displaying the graphic representation to a user.

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1           16. The device according to claim 15, wherein the  
2   graphic representation of the plurality of data values is  
3   the graphic representation of a conductance matrix.

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